

NEW YORK STATE VETERINARY COLLEGE AT CORNELL UNIVERSITY

1958-1959

THE VETERINARY COLLEGE AT CORNELL UNIVERSITY IS
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CONTENTS

Academic Calendar	<i>Inside front cover</i>
Trustees	3
Faculty, Staff, and Special Lecturers	5
Historical Sketch	9
Situation and Buildings	11
Admission and Entrance Requirements	13
Tuition and Fees	21
Scholarships	22
Student Loan Funds	24
Prizes	24
Health Services and Medical Care	27
Expenses	28
Living Arrangements	28
The Conduct of Students	30
Prescribed Four-Year Course	30
Description of Courses	33
Appendix A: Openings for Veterinarians in America	44
Appendix B: Legal Requirements for the Practice of Veterinary Medicine in the United States	46
Catalogue of Students	47
List of Announcements	<i>Inside back cover</i>

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 BEN E. SHEFFY, B.S., M.S., Ph.D., Associate Professor of Nutrition, Veterinary Virus Research Laboratory.
 J. C. GEARY, D.V.M., Associate Professor of Radiology.
 JOHN R. E. TAYLOR, V.S., D.V.M., Assistant Professor of Poultry Diseases.
 CAREL C. VAN DE WATERING, V.S., Acting Assistant Professor of Veterinary Anatomy.
 MIA REINAP, B.S., Librarian of the Flower Library.
 THOMAS F. BENSON, D.V.M., Director of the Diagnostic Laboratory.
 JOHN F. KAVANAUGH, D.V.M., Resident Surgeon in the Department of Surgery.
 JOHN ANNIS, D.V.M., Resident Veterinarian in the Department of Therapeutics and Small Animal Diseases.
 ELEANOR M. MITTEN, B.S., Assistant Librarian of the Flower Library.
 ROBERT C. MCCLURE, D.V.M., Instructor in Veterinary Anatomy.
 J. M. KING, D.V.M., Instructor in Veterinary Pathology.
 VINCENT MARSHALL, B.S., D.V.M., Research Associate in the Department of Pathology and Bacteriology.
 JOAN C. BURGHER, B.S., Research Associate in the Department of Pathology and Bacteriology.
 ROBERT H. WASSERMAN, B.S., M.S., Ph.D., Research Associate in the Department of Physiology.
 JOHN B. TASKER, D.V.M., Medical Intern in the Department of Medicine.
 ROBERT A. MOORE, D.V.M., Medical Intern in the Department of Medicine.
 HENRY F. DOERGE, D.V.M., Medical Intern in the Department of Therapeutics and Small Animal Diseases.
 DANIEL B. DAVIS, III, D.V.M., Medical Intern in the Department of Therapeutics and Small Animal Diseases.
 THOMAS GORMAN, D.V.M., Medical Intern in the Department of Surgery.
 ———, Assistant in Veterinary Bacteriology.
 LELAND E. CARMICHAEL, A.B., D.V.M., Assistant in Veterinary Bacteriology.
 JESSIE PRICE, B.S., Assistant in Veterinary Bacteriology.
 JOHN L. HYDE, A.B., D.V.M., Assistant in Medicine and Obstetrics.
 ALAN N. TAYLOR, B.S., Assistant in Veterinary Pathology.
 DANIEL N. TAPPER, B.S., V.M.D., Assistant in Veterinary Physiology.
 WILLIAM MEDWAY, B.S., D.V.M., Assistant in Veterinary Physiology.
 HOWARD E. BOND, B.S., D.V.M., Assistant in Veterinary Physiology.
 JOHN M. BOWEN, D.V.M., Assistant in Physiology.
 ARTHUR ARONSON, B.S., D.V.M., Assistant in Veterinary Pharmacology.

FIELD STAFF

- HARRY G. HODGES, D.V.M., Supervising Veterinarian, Mastitis Program. (Ithaca)
 GUY E. MORSE, D.V.M., Director of Laboratory, Mastitis Program. (Ithaca)
 SETH D. JOHNSON, D.V.M., Field Veterinarian, Mastitis Program. (Ithaca)
 RICHARD S. GUTHRIE, D.V.M., Field Veterinarian, Mastitis Program. (Ithaca)
 FRANCIS I. REED, D.V.M., Field Veterinarian, Mastitis Program. (East Aurora)
 ———, Field Veterinarian, Mastitis Program. (Kingston)
 JOHN B. CHENEY, D.V.M., Field Veterinarian, Mastitis Program. (Canton)
 HARRY C. TEMPLE, D.V.M., Field Veterinarian, Mastitis Program. (Kingston)

- HAROLD C. PARKER, D.V.M., Field Veterinarian, Mastitis Program. (Earlville)
 WILLIAM WAGNER, D.V.M., Field Veterinarian, Bovine Sterility. (Ithaca)
 KENNETH F. HILBERT, D.V.M., Director of Laboratory, Poultry Disease Program.
 (Farmingdale)
 CLEMENT I. ANGSTROM, D.V.M., Director of Laboratory, Poultry Disease Program.
 (Kingston)
 SAUL NAROTSKY, D.V.M., Director of Laboratory, Poultry Disease Program. (East
 Aurora)
 JEAN R. HAGAN, D.V.M., Director of Laboratory, Poultry Disease Program. (Oneonta)
 ELLSWORTH DOUGHERTY, III, B.S., V.M.D., Director of Laboratory, Turkey and
 Duck Program. (Eastport)

MEMBERS OF OTHER FACULTIES WHO TEACH VETERINARY STUDENTS

- HOWARD B. ADELMANN, Ph.D., Professor of Histology and Embryology.
 ROBERT F. HOLLAND, Ph.D., Professor of Dairy Industry.
 FREDERICK B. HUTT, Ph.D., D.Sc., Professor of Animal Genetics.
 JOHN M. KINGSBURY, Ph.D., Assistant Professor of Botany.
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 WILSON G. POND, Assistant Professor of Animal Husbandry.
 EDWARD C. SHOWACRE, M.D., Associate Professor of Preventive Medicine.
 K. L. TURK, Ph.D., Professor of Animal Husbandry.
 JAMES C. WHITE, Ph.D., Professor of Dairy Industry.
 WILLIAM A. WIMSATT, Ph.D., Professor of Zoology.

SPECIAL LECTURERS, 1956-1957

- ALLEN, ARTHUR A., Professor Emeritus of Ornithology, Director of Laboratory of
 Ornithology, Cornell University
 ARCHIBALD, JAMES, Head, Division of Small Animal Surgery, Ontario Veterinary
 College, Guelph, Canada
 BLOOM, FRANK, Practitioner, Flushing
 CONNER, GABEL H., Associate Professor of Veterinary Surgery and Medicine, College
 of Veterinary Medicine, Michigan State University, East Lansing, Mich.
 DURRANI, MOHAMMAD Z., Quetta, Pakistan, Graduate Student
 FRANK, E. R., Professor of Veterinary Surgery, Kansas State College, Manhattan, Kans.
 FULLER, H. K., General Practitioner, Interlaken
 GENTRY, ROBERT F., Associate Professor of Veterinary Science, College of Agriculture,
 Pennsylvania State University, University Park, Pa.
 GURALP, HALIL N., Ankara, Turkey, Graduate Student
 HARTLEY, C. E., Cattle Practitioner, Middletown
 KEAN, BENJAMIN HARRISON, Professor of Tropical Diseases, Cornell Medical College,
 New York
 KEMEN, M. J., SR., Agricultural Research Service, Albany
 KESTER, WAYNE O., Brig. General, U.S.A.F. Veterinary Corps; Assistant for Veterinary
 Service; Office of Surgeon General, Washington, D. C.
 KINGSBURY, JOHN M., Assistant Professor of Botany, Cornell University
 MCCLELLAND, F. E., SR., General Practitioner, Buffalo
 McNUTT, SAMUEL H., Professor and Chairman of Department of Veterinary Science,
 College of Agriculture, University of Wisconsin, Madison, Wis.
 MAINWARING, G. T., Animal Disease Eradication Branch, U. S. Department of
 Agriculture, Albany
 MARK, JAMES H., Associate Professor of Veterinary Medicine, Head of Small Animal

Clinic, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa.

MEIGS, R. B., University Counsel, Cornell University

OMER, CHARLES R., Veterinarian-in-Charge, Animal Disease Eradication, A.R.S., Albany

PIMENTEL, DAVID, Associate Professor of Entomology, Cornell University

PULEO, J., Public Health Veterinarian, Buffalo

SCHWARDT, H. H., Professor of Entomology, Cornell University

SILK, T. W., Professor of Accounting, Cornell University

SMITH, EDWIN B., Practitioner, Canton

SNOOK, G. W., Assistant Director, Bureau of Animal Industry, Department of Agriculture and Markets, Albany

STACK, W. F., Small Animal Practitioner, Syracuse

STEELE, J. F., Horse Practitioner, Cortland

STOLL, ISAAC V., Practitioner, Rome, Pa.

TICE, A. K., Field Veterinarian, Bureau of Animal Industry, Cortland

TRAVIS, BERNARD, Professor of Medical Entomology, Cornell University

WARREN, E. N., Associate Professor of Law, Cornell University

WATSON, DOUGLAS F., Associate Professor of Animal Pathology, Virginia Agricultural Experiment Station, Blacksburg, Va.

YORK, CHARLES J., Director, Virus Research Laboratory, Pitnam-Moore Company, Indianapolis, Ind.

HISTORICAL SKETCH

THE FOUNDING OF THE COLLEGE

THE NEW YORK STATE VETERINARY COLLEGE was established by act of the State Legislature in 1894: "There is hereby established a State Veterinary College at Cornell University," Laws of New York, 1894, p. 307. By action of the Board of Trustees of Cornell University, June 10, 1894, the location of the College upon the University campus was authorized. It was further enacted that while the University does not undertake any financial responsibility for the buildings, equipment, or maintenance of the College, it does consent to furnish instruction upon such subjects as are or shall be in its curriculum, upon such terms as may be deemed equitable.

By further acts of the Legislature provision was made for the buildings, equipment, and maintenance of the College and finally, in 1897, by "An act to provide for the administration of the State Veterinary College, established by Chapter 153 of the laws of 1894," the Trustees of Cornell University were entrusted with its administration.

With the creation of the State University of New York in 1948, the Veterinary College, as one of the four state-supported units at Cornell University, became one of its integral parts. "Created to provide a comprehensive and adequate program of higher education" the State University now includes more than thirty educational institutions. The Veterinary College, functioning in this broad context, offers teaching and research facilities to serve the veterinary medical needs of the state.

OBJECTS OF THE INSTITUTION

As stated in the act to provide for the administration of the College: "The State Veterinary College, established by Chapter 153 of the laws of 1894, shall be known as the New York State Veterinary College. The object of said Veterinary College shall be: To conduct investigations as to the nature, prevention, and cure of all diseases of animals, including such as are communicable to man and such as cause epizootics among livestock; to investigate the economic questions which will contribute to the more profitable breeding, rearing, and utilization of animals; to produce reliable standard preparation of toxins, antitoxins, and other productions to be used in diagnosis, prevention, and cure of diseases, and in the conducting of sanitary work by approved modern methods; and to give instruction in the normal structure and

function of the animal body, in the pathology, prevention, and treatment of animal diseases, and in all matters pertaining to sanitary science as applied to livestock and correlatively to the human family."

The values of farm livestock in the United States and in the State of New York are given in the following tables taken from a report of the U.S. Department of Agriculture, Agricultural Marketing Service, Crop Reporting Board, which was released February 14, 1957.

CLASS OF LIVESTOCK	NUMBER (1,000 head)	FARM VALUE (thousand dollars)
<i>United States</i>		
Cattle	95,166	8,715,177
Hogs	52,207	1,287,151
Sheep	26,370	461,609
Horses and Mules	3,558	254,913
Chickens	392,811	459,732
Turkeys	5,745	29,009
	<hr/> 575,857	<hr/> 11,207,591
<i>New York</i>		
Cattle	2,242	322,848
Hogs	146	3,066
Sheep	186	3,010
Horses and Mules	54	5,346
Chickens	11,600	18,560
Turkeys	80	536
	<hr/> 14,308	<hr/> 353,366

It will be noted that the farm animals of New York were valued at about one third of a billion dollars. The value of dairy products and eggs more than doubles this figure. Hence, it is clear that the animal industry of New York is worth about one billion dollars annually.

The function of the Veterinary College is to protect the health of this great industry. This is done through the training of veterinary practitioners, through research work on the prevalent diseases, and through services rendered by a series of diagnostic and service laboratories located in Ithaca and at seven other places throughout the state.

SITUATION AND BUILDINGS

THE VETERINARY COLLEGE is located on the campus of Cornell University at Ithaca, a city of approximately 22,000 permanent residents, situated in the famous Finger Lakes Region of New York at the head of Cayuga Lake. The city is in the south-central part of the state, about 260 miles from New York on the main line of the Lehigh Valley Railroad. It has excellent air connections with Boston, New York, Buffalo, and other cities by way of Mohawk Airlines.

Since it was founded in 1896, the College buildings have gradually approached the center of the campus because of the growth of other parts of the University around them. Early in 1954 construction was begun on a completely new set of buildings. The college moved into the new buildings during July, 1957.

The new buildings are at the eastern edge of the campus on a plot of about twenty acres in area. Nineteen in number, they occupy nearly twelve acres, leaving the remainder for paddocks and exercise lots for animals. They constitute one of the finest physical plants possessed by any of the world's veterinary schools. The equipment, of the most modern type, is ample for teaching and research in the basic and clinical sciences.

THE VETERINARY COLLEGE LIBRARY

The College is fortunate in being a part of a great University where it is able to obtain the assistance and use the facilities of great scholars in many disciplines. One advantage is access to the various libraries of the University, which contain more than 1,800,000 volumes and 12,000 current periodicals and society transactions. Of the greatest usefulness to the College is the special veterinary library, which is housed in a College building. This library consists of nearly 30,000 volumes and approximately 500 current periodicals in the field of medical sciences. This library is second to no other special veterinary library in this country.

The veterinary library was initially endowed by a gift from Roswell P. Flower, who was Governor of the State of New York when the College was founded. For this reason it was named, in his honor, the Flower (Veterinary) Library. It is maintained partly on endowment funds and partly on appropriations from the state.

THE VETERINARY COLLEGE FARM

The Snyder Hill farm of the College is maintained primarily for keeping groups of cattle, sheep, swine, chickens, turkeys, dogs, and small laboratory animals for experimental purposes. It consists of 133 acres and is about 3 miles from the campus.

Besides the many buildings for housing animals, most of which have small pastures, exercise lots, or paddocks of their own, a number of laboratory buildings have been built for a group of staff people who are stationed there. The farm has its own water distributing system, its reservoir being filled by pumping from the Ithaca supply, and its own sewage system. Both gas and electricity are furnished by public service companies.

The Poultry Disease Laboratory is a two-story structure, with two long wings for housing birds. It is used largely for the research program on turkey diseases. Numerous houses for birds occupy several acres.

The Virus Disease Laboratories consist of two laboratory buildings, to one of which is attached a series of isolation units, a separate building devoted wholly to isolation units, a building for raising small laboratory animals in isolation, and another for raising dogs in isolation. There are other buildings for swine and cattle. The principal cattle unit is enclosed in a double fence, to prevent, as far as is possible, all contact with outside animals. One of the larger buildings with attached isolation units was built by private subscription and is known as the Cornell Laboratory for the Diseases of Dogs. The dog isolation building was built from funds donated by a dog food manufacturer.

The residence of the director of the virus laboratories is located on the farms; there are also small residences for several of the employees.

ADMISSION AND ENTRANCE REQUIREMENTS

SINCE the fall of 1949 the minimum education requirements for admission to the New York State Veterinary College have been the satisfactory completion of two years' study in an approved college or university. The two years of college study must include:

English—6 semester hours

Physics—6 semester hours, including laboratory

Biology or Zoology—6 semester hours, including laboratory

Chemistry—12 semester hours, including Organic Chemistry with laboratory.

The courses in English, physics, and biology or zoology should cover at least one academic year each. The work in chemistry should cover at least one and a half academic years and must include a course in organic chemistry with laboratory work. A course in zoology is preferred to a course in biology.

An applicant is urged not to take courses identical to, or substantially identical to, those in the veterinary curriculum.

An applicant for admission is expected to have facility in the use of the English language in speech and composition. Therefore, a course in oral and written composition, or in speech, is strongly recommended.

The choice of other courses is left to the student, but the following are recommended: quantitative chemical analysis, a modern foreign language, history, economics, government, botany, mathematics, biometry, philosophy, psychology, comparative anatomy, general physiology. It is suggested that not more than 30 semester hours of the minimum requirements be devoted to chemistry, biology or zoology, and physics.

Two years of study has been interpreted as meaning the passing of one half as many semester credit units as are required by the particular institution for its baccalaureate degrees. Most institutions which are run on a semester basis require 120 units, but some require 124, and some even 128. At least 60 semester units must be presented, therefore, and in some instances 62 or more.

A *registered college* is one which is registered with, and its curriculum approved by, the New York State Education Department. All colleges within New York State which are authorized to grant baccalaureate degrees are registered and approved. This is not true, however, of all such institutions outside New York State. In general, practically all of the larger colleges and universities are registered. If in doubt as to

whether any particular school is registered, one should address correspondence to the State Education Department, Albany, N.Y., and not to this College.

The *Farm Practice Requirement* formerly could be met during summer vacations after admission to the College. This requirement has been increased, and at least one half of the experience must now be obtained prior to admission. A total of 20 farm practice points is required, of which at least 10 must be for experience with livestock. A minimum of 10 points, including not less than 5 for livestock, must be presented to qualify for admission. By livestock, farm animals are meant. Dogs and cats are not included, and not more than 3 points may be claimed for experience with poultry.

Farm practice points are awarded on the basis of tests administered by the Department of Farm Practice, New York State College of Agriculture, Ithaca, N.Y. Except for students who have previously enrolled in the College of Agriculture and whose farm practice scores are available to it, the Committee on Admissions of the Veterinary College will estimate the experience of all candidates. All who are admitted without farm practice ratings in the Department of Farm Practice will be required to take the tests after admission, and all who are found to be deficient will be required to make up their deficiencies during the first two summer vacations while they are in college.

Applicants who have been reared on farms where livestock are kept should easily meet all requirements. Those who are not farm-reared will have to spend at least three months as full-time farm workers with some responsibility for farm animals to qualify for admission. The full requirements can hardly be met by less than six months of such experience. Little credit will be allowed for experience obtained before the age of 14 years.

This requirement is applicable only to men students who are United States citizens; nevertheless, women applicants will improve their chances of acceptance by acquiring as much experience with farm animals and farm life as they can get.

Whenever possible, prospective applicants are urged to obtain the full experience required before submitting their applications. In a highly competitive situation, those who have the full requirements will have an advantage over those who have only the minimum.

The applicant should write, in the fall of the year preceding the one in which admission is desired, to the Director of Admissions, Edmund Ezra Day Hall, Ithaca, N.Y., requesting the application forms for admission to the Veterinary College. The Director of Admissions will require a transcript of the applicant's college record and high school regents marks if a New York State high school was attended.

The number of students that can be admitted annually is limited. It is likely that the number of applicants who can meet the scholastic

requirements will exceed the number that can be accepted. In this case a Committee on Admissions of the faculty of the Veterinary College will select those to be admitted after considering not only the formal preparation but also the available evidence bearing on each applicant's character, seriousness of purpose, and fitness for the work that he proposes to undertake. The committee will require a personal interview, whenever this is feasible.

Priority of application is not necessarily a determining factor in the selection of students to be admitted; nevertheless, the gathering and weighing of the necessary evidence require time, and, as the committee will begin filling the eligible list early in the year, it is advantageous to the candidate to file his application early. March 1 is the latest date for filing applications. Students who have not completed the work required for admission but expect to do so prior to July 1 may apply, and the committee will act on the applications provisionally.

RULES COVERING ADMISSION

Applicants for admission must not only satisfy the entrance requirements but must also comply with certain rules of the University, as follows:

1. Every candidate for admission who receives notice of approval of his application must deposit \$45 with the Treasurer. Candidates are warned not to send cash through the mails. A check, draft, or money order should be payable to *Cornell University* and should be sent to the Office of Admissions, Edmund Ezra Day Hall, Ithaca, N.Y.

If the candidate matriculates, the deposit is credited to his account to cover matriculation charges and certain graduation expenses and to establish a fund for undergraduate and alumni class activities.

If the candidate withdraws before the due date of his deposit, the deposit will be refunded. No refund will be made to an applicant who withdraws after the due date of the deposit; in that case the whole deposit will be retained by the University in payment of its costs and intangible losses resulting from such withdrawal.

2. Each entering student is expected to assume personal responsibility for fulfilling the following health requirements adopted by the trustees of Cornell University. Permission to register for a new semester will not be granted unless all health requirements pertaining to the previous semester have been fulfilled.*

IMMUNIZATION. . . . A satisfactory certificate of immunization against smallpox, on the form supplied by the University, must be submitted before registration. It will be accepted as satisfactory only if it certifies that within the last three years a successful vaccination has been performed. If this requirement cannot be fulfilled by the student's home

*Prospective graduate students should consult the *Announcement of the Graduate School* for health requirements on entrance.

physician, opportunity for immunization will be offered by the Cornell medical staff during the student's first semester, with the cost to be borne by the student. If a student has been absent from the University for more than three years, immunity will be considered to have lapsed.

X-RAY... Every student is required to have a chest X-ray. He may present a chest film, made by a private physician, on or before entering Cornell, provided that it was obtained within six months of initial registration and is of acceptable quality. Otherwise, he may obtain the chest X-ray at the University during orientation or his first semester; in that case, the charge, covering also any necessary recheck films, will be included in the general University fee. When a student has been away from the University for more than a year, he must have another X-ray on re-entrance.

MEDICAL EXAMINATION... Every undergraduate student is required to have a medical examination. (This includes special students who must meet undergraduate requirements such as military training, physical education, etc.) An undergraduate student accepted for admission will be sent forms to be filled out by his home physician and returned promptly to the Gannett Medical Clinic. A University physician will review the material before it becomes part of the student's permanent health record. All information given is confidential. During orientation, a specialized recheck of any questionable medical items will be made, and if need for re-examination or follow-up is indicated, an appointment to consult a physician at the Clinic will be given. When a student has been away from the University for more than a year, he must, upon re-entrance, submit an interim health history on a form to be obtained from the University.

TETANUS TOXOID... Undergraduate students, including special students enrolled in one-year or two-year courses, are required to be immunized to tetanus through use of tetanus toxoid. The University has adopted this rule to avoid reactions, often serious, if antitoxin (horse serum) is administered at the time of injury. Immunity through toxoid offers the advantage of protection without the risk of anti-toxin reaction.

Active immunization is to be acquired within nine months of initial registration unless the student's home physician is unable to give the toxoid. If there has been no previous immunization, an original series of two or three doses, depending on the type used, spaced at least one month apart, will be necessary. This will be followed by a booster dose one year later. If there has been previous immunization within ten years, reactivation by a single booster dose is required for entrance to Cornell. If previous immunization was ten or more years ago, two booster doses, spaced one month or more apart, are required. After entrance, five years is considered the maximum limit between booster

doses, with a reactivating dose to be given at any time in case of injury.

Certification of immunization by the student's home physician is to be reported on the immunization form supplied by the University. Students unable to obtain the immunization at home will be given the opportunity, during the first semester, to obtain it from the Cornell medical staff or any Ithaca physician. If it is received from the latter, a charge comparable to the average physician's fee will be made. Opportunity to obtain the required booster dose one year later, and further booster doses as recommended by recognized medical authorities, without cost to the student, will also be given.

ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing as members of the second-, third-, or fourth-year class must present the necessary educational qualifications for admission to the first-year class and must pass satisfactory examinations in all of the work for which they desire advanced credit, or offer satisfactory certificates of the completion of this work in other schools whose entrance requirements and courses of study are equivalent to those of this College. No person will be admitted to any advanced class except at the beginning of the college year in September.

ADMISSION TO THE GRADUATE SCHOOL

Graduates of this College or other colleges may enter the Graduate School of Cornell University and pursue work in the Veterinary College and allied departments of the University. A prospective graduate student should consult the *Announcement of the Graduate School* and apply to the Dean of the Graduate School.

The Veterinary College, alone or in combination with other departments of the University, offers advanced students excellent opportunities for study and investigation. Its situation gives it abundant and varied material for research, and it has ample facilities for the prosecution of such work. It encourages graduate and advanced students to carry on independent investigations. Courses of study especially adapted to advanced work and research will be found among those listed on pages 33-43 of this Announcement.

Students who hold the degree of D.V.M. from recognized colleges or schools in the United States or Canada can now transfer one year's residence credit for that work toward the Doctor of Philosophy degree whenever the student's Special Committee certifies that the work done in the years of professional study formed an integral part of the work required for the doctorate and was of equivalent quality.*

ESTABLISHMENT OF THE NEW DEGREE, DOCTOR OF SCIENCE IN VETERINARY MEDICINE (D.Sc. IN V.M.). . . . At its meet-

*By action of the faculty, January 28, 1955.

ing, November 23, 1954, the faculty approved the establishment of a new degree, D.Sc. in V.M., and subsequently this degree was approved by the University faculty and by the Board of Trustees. Cornell is the first university in the United States to offer this degree. Admission to candidacy for the degree, Doctor of Science in Veterinary Medicine, is a function of the Division of Veterinary Medicine of the Graduate School. The following requirements must be met before admission to candidacy:

1. The candidate must have been graduated from an approved school of veterinary medicine for at least five years.
2. He must have demonstrated by published papers his ability to do independent meritorious research.
3. He must have offered satisfactory evidence to the Division of his ability to read accurately the French and German** literature in his field.

Candidates who have no graduate credit beyond their D.V.M. degree must complete not less than four residence units to qualify for the degree.† Those who have a Master of Science degree or its equivalent from an approved college or university may complete the minimum residence credit by acquiring at least two additional units.

After a candidate has been admitted, he will select a member of the faculty in Veterinary Medicine to serve as chairman of his Special Committee. The faculty of the Division will then select two other members of the Committee. These three individuals will have charge of the candidate's program and will be responsible to the faculty of the Division for supervising his work. The candidate's work must fall in the following categories:

1. Advanced courses in any of the sciences which have a relation to medicine. Selected courses which are part of the regular curriculum of the Cornell University College of Medicine may be accepted for not more than half of the total credit in this category. In no case shall credit be granted for courses which are part of the regular curriculum in Veterinary Medicine or for similar courses in the Medical College curriculum.

2. Regular attendance and study in any of the clinics of the Veterinary College or of the Medical College.

All candidates must take at least two thirds of their work in courses that may properly be included under Category 1. If desired, they may take all of their work in Category 1. Not more than one third of their work may be taken in Category 2.

Courses shall be deemed to have been satisfactorily completed only upon receipt of a regular transcript of credits. Following completion

**In special cases other languages may be accepted according to the provisions of Paragraph 118 and 119 of the *Code of Legislation* of the Graduate faculty.

†It is considered that at least two units of work leading to the degree of Doctor of Veterinary Medicine are an integral part of this professional degree.

of his course work, each candidate for this degree shall present an acceptable monograph or thesis in the area of his special interest and shall submit to a general examination covering the subject matter of his work. The Special Committee shall set the time and place of his examination and invite all members of the Division and all members of the Graduate faculty of other fields who have participated in his training to attend. They shall have the right to examine the candidate and to express to the Special Committee their opinions of the candidate's competency, but the Special Committee alone shall be responsible for recommending him for the degree. The recommendation shall be addressed to the faculty of the Division of Veterinary Medicine of the Graduate School, which then shall make recommendations to the Graduate School.

SEMINARS.... The several departments of the College hold seminars or special conferences for their advanced and graduate students. The seminar hears reports of the results of investigations and the progress of knowledge in its particular field, discusses methods of advanced and independent work such as are expected of those who are preparing theses or prosecuting any special investigation, and hears the reports of the students on the progress of their work. By means of the seminar the student incidentally gains facility in public speaking and fits himself to take a creditable part in the meetings of veterinary or medical societies.

STUDY FOR PRACTITIONERS

The very rapid advances made during recent years in veterinary science and in facilities and methods for teaching it, as well as the advantages to be gained by studying a given subject under more than one teacher, make it highly desirable that busy practitioners should be enabled as far as possible to increase their personal knowledge by means of study at such times as they can leave their practices. The New York State Veterinary College wishes to satisfy this want as far as practicable and offers every facility at hand to accomplish this end.

Veterinarians who are legally authorized to practice at their places of residence will be admitted to any class in the College at any time and for such period as they may elect without entrance examinations.

They will be wholly free to elect any studies that are being regularly taught at the time and will be granted all opportunities and facilities offered to regular students so long as these privileges do not interfere with the instruction of the regular students. No tuition will be required for licensed veterinarians practicing in the State of New York. Those taking laboratory courses will be required to pay fees to cover the cost of the materials used. Every practicable facility will be offered for special study along desired lines. An inspection of pages 30-43 will enable a practitioner to determine in advance precisely what work will be in progress at a given date.

This work is offered to veterinarians entirely for the benefit they may derive from increased knowledge in veterinary science and does not contemplate the granting of a degree, certificate, or other evidence of responsibility on the part of the College.

General inquiries in reference to this work should be addressed to the Dean, whereas questions relating to studies in the various departments may be addressed to the heads of the departments concerned.

COMBINED COURSES

Students who do their preveterinary work either in the College of Agriculture or the College of Arts and Sciences of Cornell, may, by judicious early planning, be able to qualify for both B.S. (or A.B.) and D.V.M. degrees in less time than would be required if the courses were taken consecutively. This can be done by double registration during the latter part of the period whereby certain course credits in the veterinary curriculum can be applied toward completing the requirements for the Bachelor's degree.

In these instances three years are ordinarily spent as a candidate for the baccalaureate degree before the application for veterinary medicine is filed. It should be clearly understood that no assurance can be given in the beginning that candidates will be permitted to complete this plan, since decision on admission to the veterinary course cannot be given until the admission requirements of the Veterinary College have been completed.

REGISTRATION

Every student is required to register with the Registrar of the University at the beginning of each term (see the calendar of the University for the day of registration). After completing that registration, he must register on the same day with the Secretary of the Veterinary College. After being admitted to the University no student is allowed to register after the close of the regular registration day except by special permission.

FOREIGN STUDENTS

A member of the University staff, the Counselor to Foreign Students, looks after the welfare of students coming from outside the United States. These students are invited to apply to him for any information they need and to consult him about living quarters, personal problems, social questions, or difficulties of any kind. His office is in Edmund Ezra Day Hall. It is suggested that foreign students write to him before they come to Ithaca or call on him when they arrive here.

TUITION AND FEES

TUITION . . . For students not residents of the State of New York the tuition in the Veterinary College is \$150 a term, payable at the beginning of each term as printed on the registration cards. Tuition is free to residents of the State of New York. The law governing administration of the College provides that "no tuition fee shall be required of a student pursuing the regular veterinary course who for a year or more immediately preceding his admission to said veterinary college shall have been a resident of this State." A limited number of tuition scholarships are available to nonresidents; see "Tuition Scholarships," page 22.

THE COLLEGE AND UNIVERSITY GENERAL FEE . . . For certain services and privileges the University charges students a College and University General Fee of \$118.50 each term over and beyond tuition. This general fee is paid by all students in the division at Ithaca, the amount varying in the different schools and colleges. It contributes toward the services supplied by the libraries, the Clinic and Infirmary, and the student union in Willard Straight Hall, pays a portion of the extra costs of laboratory courses and general administration, and supports programs of physical recreation and student activities.

Tuition and other fees become due when the student registers. The University allows twenty days of grace after the last registration day of each term. The last day of grace is printed on the registration card which the student is required to present at the Treasurer's office. Any student who fails to pay his tuition charges, other fees, or other indebtedness to the University, or who, if entitled to free tuition, fails to claim it at the Treasurer's office and to pay his other fees and indebtedness within the prescribed period of grace, is dropped from the University unless the Treasurer has granted him an extension of time to complete payment. For such extension the student is assessed a fee of \$2. A fee of \$5 is charged for late payment when no extension has been granted. For further information, consult the *General Information Announcement* (obtained by writing to Cornell University Announcements, Edmund Ezra Day Hall, Ithaca, N.Y.).

Tuition or other fees may be changed by the Trustees at any time without previous notice.

CHARGES FOR MINOR DELINQUENCIES

Every student is held personally responsible for any injury done by him to any of the University's property.

Assessments, charged to the student's account and payable at the Treasurer's office, are levied upon the students in certain circumstances, under the following rules of the University:

A matriculated student desiring to register after the close of registration day shall first pay a fee of \$5.

A student desiring to file his registration of studies after the date set by his college for filing the same shall first pay a fee of \$2.

A student desiring to take an examination or other test for the removal of a term condition (including the making up of a mark of "absent" or "incomplete") shall first pay a fee of \$2 for each examination or other test.

A student desiring to make an appointment for the required medical examination or conference after twenty days from the last registration day of the term shall pay a fee of \$2.

For reasons satisfactory to the proper authority any of the above mentioned assessments (except that levied for examination or other test to remove a condition) may be waived in any individual case if the student's failure to comply with the regulation was due to ill health or to other reasons beyond his control. Application for such a waiver should be made to the dean of the college enrolling the student.

SCHOLARSHIPS

UNDERGRADUATE SCHOLARSHIPS. . . . Needy students who have done well scholastically may receive help from various scholarship funds. Discretion over the amount of money granted is vested in committees of the University who evaluate the merits of the applicants. Students interested in financial aid should see the Scholarship Secretary in the Office of the Dean of Men and Dean of Women. There are many scholarships and grants-in-aid open to all University undergraduates, as well as several which are specifically for veterinary students. The latter, many of which are prizes, are described in the following pages.

TUITION SCHOLARSHIPS. . . . The trustees have authorized a limited number of scholarships, each of an annual value of \$300, the amount of the annual tuition, to be awarded each year by the Veterinary College. The scholarships are awarded to undergraduate students

who show promise of becoming outstanding veterinarians in the judgment of the faculty and who are not residents of New York State. Each student holding a scholarship must maintain a standing satisfactory to the faculty.

(In recent years the number of New York State applicants has been much greater than can be accommodated. For this reason the number of out-of-state students admitted has been limited, and tuition scholarships are rarely awarded. Only those who have extraordinary qualifications and a real need of financial assistance are likely to be considered seriously for these scholarships.)

VALENTINE MOTT KNAPP SCHOLARSHIP . . . This annual scholarship of the value of \$400 was established through the will of David V. Knapp as a memorial to his brother, Dr. Valentine Mott Knapp, '04. By action of the faculty, the award is to be made each year to a qualified applicant at the completion of his third year's work. Students who wish to be considered for this scholarship should make application for it to the Dean not later than May 1. In awarding the scholarship, the faculty will take into consideration the ability of the applicant to do creditable academic work, the personal characteristics of the applicant with respect to professional attitude, and his financial need.

A.S.P.C.A. SCHOLARSHIP . . . This scholarship in the amount of \$300 is offered annually by the American Society for the Prevention of Cruelty to Animals. It is paid from funds raised by Gordon Wright, owner of Secor Farms, from benefit horse shows held at his stables in White Plains, New York.

The scholarship is awarded in the spring term to a member of the third-year class for use during his fourth and final year. The recipient is chosen by the Veterinary faculty on the basis of need, scholarship, demonstrated interest in horses, and general competence. It is open to students (a) who are particularly interested in equine practice, (b) who are residents of New York, and (c) who expect to practice in New York State after graduation.

STUDENT LOAN FUNDS

THE CORNELL VETERINARY ALUMNI ASSOCIATION, the New York State Veterinary Medical Society, and the family of David E. Wright, '12, have donated funds to the University from which loans to veterinary students can be made. Veterinary students also are eligible to apply for loans from other funds held by the University. All of these are administered through the Office of the Dean of Men and Dean of Women. These funds are for emergency use only. Students who are in real need should not hesitate to apply to them for assistance. It is suggested that students discuss their needs with the Dean of the College before applying.

PRIZES

CORNELL UNIVERSITY has been given a considerable number of funds for the endowment of prizes to be awarded annually to enrolled students. Some of these prizes are open to competition by students of the University generally. The University publishes a list of them under the title *Prize Competitions*. Copies will be mailed on request addressed to Cornell University Announcements, or may be obtained at the Visitor Information Center, Edmund Ezra Day Hall. Prizes open to competition only by students of the Veterinary College are as follows:

THE BORDEN VETERINARY SCHOLARSHIP AWARD was established by the Borden Company Foundation, Inc., in 1945. It consists of an annual award of \$300 to be made to the member of the fourth-year class in Veterinary Medicine who attained the highest scholastic record in all veterinary studies prior to the final year. The award will be paid to the recipient during the fall term of the final year. In the event that the Dean finds it inappropriate to make the award in any one year, the award may be deferred, but only one award shall be made in any succeeding year.

THE HORACE K. WHITE PRIZES, established by Horace K. White of Syracuse, are awarded annually to meritorious students in the grad-

uating class of the College. They consist of a prize of \$75 to the first in merit and a prize of \$25 to the second in merit.

THE GRANT SHERMAN HOPKINS PRIZE of \$40 in Veterinary Anatomy was endowed by Mrs. Ann Ottaway Hopkins in 1955 in memory of her husband. Dr. Hopkins served Cornell University for forty-five years (1889 to 1934). Upon the opening of the Veterinary College in 1896, he became a member of the original faculty as Assistant Professor of Veterinary Anatomy and Anatomical Methods. He was made a full professor in 1903 and served in that capacity until his retirement in 1934.

The prize will be awarded by the Veterinary faculty upon the recommendation of the staff of the Department of Veterinary Anatomy. It will be awarded to a member of the graduating class on the basis of interest, ability, perseverance, and performance in the work in veterinary anatomy. Special consideration will be given to extracurricular work in animal morphology. Although scholarship is an important consideration, the award is not based wholly on that.

THE JANE MILLER PRIZE of \$40 in physiology is awarded to the student or students doing the best work in this subject. This prize is usually divided into a first prize of \$25 and a second prize of \$15 and is awarded at the end of the second year.

THE JAMES GORDON BENNETT PRIZE of \$40 is offered to members of the graduating class. The award is based upon the work in the clinics giving evidence of the ability of the recipient to handle diseased animals humanely. Special emphasis is laid upon the ability of the student to apply effectively local and general anesthesia.

THE ANNE BESSE PRIZE of \$40 is awarded in the principles and practice of veterinary medicine. This award is based upon the work in the clinics giving evidence of ability in clinical diagnosis.

THE CHARLES GROSS BONDY PRIZES. Two annual prizes are awarded to the two fourth-year students who rank highest in proficiency in the courses of practical medicine and surgery of small animals. The first prize is \$25, and the second prize is \$15.

THE MARY LOUISE MOORE PRIZE IN BACTERIOLOGY was established by a bequest of Dr. Veranus A. Moore in honor of his wife. Dr. Moore was a member of the original faculty of the Veterinary College. He was Professor of Pathology, Bacteriology, and Meat Inspection from 1896 to 1926, and Dean of the Veterinary College from 1907 to 1920.

The proceeds of the endowment (\$40) may be awarded each year, upon recommendation of the head of the Department of Pathology and Bacteriology and with the approval of the Dean of the College, either

as a prize to students who have done the best work in the department or as a subsidy to encourage individual research work of students by defraying expenses of their experiments.

THE POULTRY DISEASE PRIZE was established by Dr. Nathan Wernicoff, '31, and Dr. Tevis Goldhaft, '35, of Vineland, N.J., for the purpose of stimulating interest in diseases of poultry. The prize consists of \$50 for the best composition or essay, or the best original work reported, by a member of the fourth-year class. Competing papers must be submitted not later than the first week of the second term of the college year to the Dean, who will appoint a suitable committee to read them and make recommendations on the award. The award will not be made if, in the judgment of the committee, none of the papers submitted are considered to be sufficiently meritorious.

THE ALPHA PSI PRIZE is given by Beta (Cornell) Chapter of the Alpha Psi Fraternity. It was suggested by the donors that this prize be "awarded by the faculty to a member of the fourth-year class who has shown by his scholarship, personality, character, and breadth of interest that he is capable of elevating the prestige and expanding the services of veterinary science in practice, in education, and in its relationship to community, state, and national welfare."

THE SIGMA IOTA ZETA PRIZE is given by the Cornell Chapter of the Sigma Iota Zeta Fraternity to a fourth-year student who, in the scope of his professional training, has shown the most marked over-all improvement since his freshman year and has thereby demonstrated his sincere attitude of high purpose and achievement toward his profession. The prize consists of a \$25 Savings Bond to be awarded to the most meritorious fourth-year student unless in the opinion of the faculty no student in the fourth-year class is worthy of the award. In such a case, the award shall not be given that year but be left open for the following year.

NEW YORK STATE VETERINARY MEDICAL SOCIETY PRIZES, established by the New York State Veterinary Medical Society, consist of three cash awards of the value of \$25, \$15, and \$10, respectively. They are awarded to members of the fourth-year class who present and have approved the best case reports for publication in the organ of the Society, *Veterinary News*. The award year extends from May 1 to April 30. All case reports to be considered must be received at the Dean's office by the latter date. Each case report must be reviewed and approved for publication by the head of the department in which the case was received, studied, and treated, or by a person in the department designated by him. After the case report is approved for publication, two typewritten copies must be presented to the Dean's office. One copy will be sent to the editor of *Veterinary News*; the other will

be placed on file. Case reports published jointly by several authors are acceptable. No limit is placed on the number of case reports presented by a student.

THE WOMEN'S AUXILIARY A.V.M.A. PRIZE of \$25 is awarded annually to a senior student for a special contribution which advances the standing of the Veterinary College on the campus.

THE JACOB TRAUM STUDENT AWARD will be given annually to the senior student in the New York State Veterinary College who is adjudged, by means considered appropriate by the Dean of the College, as having exhibited in his scholastic career superior interest and accomplishments in bacteriology, epizootiology, pathology, and virology, including aptitude for and expressed interest in research on infectious diseases.

HEALTH SERVICES AND MEDICAL CARE

THESE services are centered in the Gannett Medical Clinic or outpatient department and in the Cornell Infirmary or hospital. Students are entitled to unlimited visits at the Clinic; laboratory and X-ray examinations indicated for diagnosis and treatment; hospitalization in the Infirmary with medical care for a maximum of fourteen days each term and emergency surgical care. The cost for these services is included in the College and University general fee. For further details, including charges for special services, see the *General Information Announcement*.

On a voluntary basis, insurance is available to supplement the services provided by the health fee. Thus, hospitalization at the Infirmary in excess of fourteen days per term, and expenses for illness and accidents outside Ithaca both during the academic year and during vacations would be covered. (Information about such insurance may be obtained at the Gannett Medical Clinic.)

EXPENSES

LIVING COSTS cannot be stated with the same degree of certainty as regular University charges, since they depend to a great extent upon the individual's standard of living. Men students spend between \$130 to \$195 a term for room and from \$275 to \$325 a term for board. Laundry, done in Ithaca, may require \$25 to \$40 a term. For undergraduate women, the fixed charge for board, room, and laundry in the dormitories is \$495 a term.

Books, instruments, and supplies will cost \$30 to \$50 a term.

Additional allowance must be made for clothing, travel, and incidentals.

STUDENT HOUSING

CORNELL UNIVERSITY provides attractive, quiet, living accommodations at reasonable cost for men and women students, undergraduate and graduate. Pleasant surroundings are assured those who occupy the campus dormitories, which are within convenient distance of the academic buildings, the libraries, and the student union building (Willard Straight Hall).

In addition to the University-operated residential halls, the Ithaca area offers a wide range of accommodations to meet individual needs.

MEN STUDENTS. . . Housing for men at Cornell falls into several categories: residential halls for men, fraternities (for members only), and off-campus facilities. Meals may be obtained in cafeterias and restaurants on or near the campus. Men are not required to live in the University dormitories and are individually responsible for making their own living and dining arrangements.

Application forms for University dormitory rooms are mailed to undergraduate candidates for admission by the Office of Admissions at the time of notification of provisional acceptance to the University. *A prospective student should not assume that admission to the University automatically reserves a space for him in the dormitories.* The application should be completed and returned to the Office of

Residential Halls as soon as plans to enter the University are complete, but no later than June 1st.

The entering freshman class is given first consideration in assignment of dormitory space. Approximately 60 percent of the 2000 available spaces will be reserved for newly matriculated students. The balance is available for upperclassmen and graduate students. *Assignments are made in order of application date* to those dormitory applicants who are admitted to the University by June 1.

WOMEN STUDENTS... All undergraduate women who reside outside the Ithaca area are required to live and take their meals in University dormitories or in sororities (for members only). Permission to live elsewhere in Ithaca is granted under exceptional circumstances upon written application to the Office of the Dean of Women, Edmund Ezra Day Hall.

An application form for living accommodations will be included in the notice of provisional acceptance sent by the Office of Admissions to each undergraduate woman candidate. This form should be completed and returned promptly to the Office of Residential Halls.

Graduate women students should address inquiries regarding housing directly to the Office of Residential Halls, Edmund Ezra Day Hall. Information about both on-campus and off-campus facilities will be forwarded upon request.

MARRIED STUDENTS... Housing for married students is available in the new University-operated, 96-unit family housing development known as the Pleasant Grove Apartments, in the recently renovated 84-unit development southeast of the campus (Cornell Quarters), or in privately owned properties in Ithaca and vicinity. Inquiries concerning either type of housing should be directed to the Off-Campus Housing Office of Residential Halls, Edmund Ezra Day Hall.

THE CONDUCT OF STUDENTS

THE UNIVERSITY'S rule governing the conduct of students is this: "A student is expected to show both within and without the University unfailing respect for order, morality, personal honor, and the rights of others." The rule is construed as applicable at all times, in all places, to all students of the University.

Undergraduate disciplinary cases are reviewed by the Men's and Women's Judiciary Boards, who make recommendations to the Committee on Student Conduct for final action. A student may at any time be removed from the University if, in the opinion of the Committee, such action is in the University's best interests.

PRESCRIBED FOUR-YEAR COURSE

LEADING TO THE DEGREE OF DOCTOR OF VETERINARY MEDICINE (D.V.M.)

REQUIREMENTS FOR GRADUATION

IN ORDER to receive the degree of Doctor of Veterinary Medicine (D.V.M.), candidates must satisfy all the entrance requirements (see pages 13-20), must successfully pursue the courses named in the following curriculum, must have paid all fees due, and must have spent at least one year in residence.

The work of the College is arranged to begin late in September and to close in June. The academic year is divided into two terms.

At the conclusion of each term the Veterinary faculty will review the records and conduct of students. Unsatisfactory students will be dropped from the College.

THE CURRICULUM

In the following summary of the curriculum, the figure in the first column after the name of the course is the number of the course and refers to a description on one of the following pages: 33-43; the figures in the second and third columns indicate the hours of credit given for the successful pursuit of the several courses in either term. The abbreviation "Req." indicates that a course, or its equivalent, is required for graduation but that no formal credit is given for the course.

FIRST YEAR

	Course number	Credit	
		Fall term	Spring term
Anatomy	1	7	—
Anatomy	2	—	7
Histology and Embryology	305	4	—
Histology and Embryology	306	—	4
Animal Husbandry	1	3	—
Physiological Chemistry	11	6	—
Physiology	12	—	3
Animal Genetics	124	—	3
Botany	3	—	2
Animal Husbandry	50v	—	1
Total		20	20

SECOND YEAR

Physiology	13	3	—
Experimental Physiology	14	3	—
Bacteriology and Immunology	43	4	—
Bacteriology and Immunology Laboratory	43a	5	—
General Pathology	40	2	—
General Pathology Laboratory	40a	2	—
Special Pathology	41	—	2
Special Pathology Laboratory	41a	—	3
Therapeutics and Pharmacy	20	—	4
Parasitology	62	—	3
Parasitology Laboratory	62a	—	1
Animal Husbandry	11	—	4
Pharmacology	15	—	4
Total		19	21

THIRD YEAR

Food Quality Control	48	6	—
General Surgery	30	4	—
Surgical Exercises	31	1	—
Infectious Diseases	42	3	—
Diseases of Large Animals	50	5	3
Diseases of Small Animals	21	3	—
Applied Anatomy	3	1	—
Applied Anatomy	4	—	1
Surgical Exercises	23	—	1
Obstetrics	51	—	5
Special Surgery	32	—	5
Diseases of Poultry	46	—	3
Roentgenology	27	—	1
Applied Parasitology	63	—	1
Clinical Orientation	201	Req.	Req.
Total		23	20

FOURTH YEAR

	<i>Course number</i>	<i>Credit</i>	
		<i>Fall term</i>	<i>Spring term</i>
Diseases of Large Animals	52	2	4
Diseases of Small Animals	22	3	—
Jurisprudence, Ethics, and Business Methods.....	33	—	1
Clinical Conferences	202	Req.	Req.
Clinics*	203	Req.	Req.

*Clinics will be held all day, Monday through Friday, beginning at 9 a.m.; on Saturday until 1 p.m.

DESCRIPTION OF COURSES

IN THE following pages a list of the teaching departments of the College is given. Under each department heading, brief descriptions of the courses offered will be found. Most of these courses are a part of the veterinary curriculum; a few are elective to veterinary students or are given primarily for graduate students or students of other colleges of the University.

The clinics are operated by several departments. A brief statement about the particular clinical work of each department concerned will be found in the general description of the activities of that department. A general statement of the operation of the clinics, with courses and numbers, is given under a special heading following the departmental descriptions.

Finally, there is a listing of courses given by other colleges as a part of the veterinary curriculum.

COURSES OFFERED BY THE VETERINARY COLLEGE

ANATOMY

Professor M. E. MILLER; Associate Professors R. E. HABEL, H. E. EVANS; Acting Assistant Professor C. C. VAN DE WATERING; Instructor R. C. McCLURE.

1. *ANATOMY.* First year, fall term. Credit seven hours. Lecture Th 9. Laboratory, M 10-12:30, T 9-12, W 9-11, Th 10-12:30, F 9-11, S 9-12:30. Professor MILLER; Associate Professors HABEL and EVANS; Acting Assistant Professor VAN DE WATERING; Instructor McCLURE.

Anatomy is the foundation upon which physiology, pathology, and clinical medicine are built. Anatomy 1 is intended to provide instruction leading to a general conception of the structure of a typical mammal. The lectures deal with recent advances in anatomy and the correlation of the region or system currently dissected with the plan of construction of the body as a whole. The dog is the subject of the basic dissection, with two students assigned to each specimen.

Little formal laboratory time is spent on osteology. Each student is provided with a disarticulated dog's skeleton which he may take to his residence, and he is expected to know the parts of the skeleton when the soft parts related to them are dissected. A deposit of \$15 is assessed each student for the skeletal material.

2. *ANATOMY.* First year, spring term. Credit seven hours. Lecture, M 9. Laboratory, M 10-1; T 10-1, 2-4:30; Th 10-1; F 2-4:30; S 10-12:30. Professor MILLER; Associate Professors HABEL and EVANS; Acting Assistant Professor VAN DE WATERING; Instructor McCLURE.

Study of the cow, horse, sheep, pig, and chicken. Since the body plan of all mammals is similar, only those parts of the cow and horse which differ from the dog or are of special surgical, diagnostic, or morphological interest are studied. The lectures are comparative in nature, the salient differences of the various organs and tissues among the veterinary species being elucidated.

3. *APPLIED ANATOMY*. Third year, fall term. Credit one hour. Laboratory, Th 10-12:30 or S 10-12:30. Associate Professor HABEL.

An opportunity for practice in the recognition of those anatomical features which are essential to diagnostic, surgical, obstetrical, and post-mortem procedures. The approach is topographical, comparative, and clinical. The emphasis is upon the study of living animals, supplemented by dissections, serial transections, models, and radiographs.

4. *APPLIED ANATOMY*. Third year, spring term. Credit one hour. Laboratory, M 2-4:30 or Th 2-4:30. Associate Professor HABEL.

Anatomy 4 is a continuation of Anatomy 3.

6. *ADVANCED ANATOMY*. Fall and spring terms. Professor MILLER; Associate Professors HABEL and EVANS. Prerequisites, Courses 1, 2, 3, and 4 or Comparative Anatomy 211 and 212 or their equivalent. Hours to be arranged. Preregistration not required.

Designed to give students the opportunity to carry on advanced work in veterinary anatomy.

9. *ANATOMY OF FARM ANIMALS*. By arrangement. Credit 3 hours. Hours to be arranged. Taught in spring term of alternate years. Associate Professor EVANS. (Not given 1957-58.)

Designed primarily for graduate students in animal husbandry, conservation, zoology, and nutrition, the course is, however, open to a limited number of undergraduate students by permission, regardless of college.

An opportunity to study the comparative morphology of farm animals with regard to their phylogenetic and functional relations. Students will dissect the dog, horse, cow, pig, and chicken with major emphasis placed on the dog and cow. Comparative lectures and student presentations throughout the term. Models, live animals, and species other than those dissected will be available.

PHYSIOLOGY

Professors H. H. DUKES, J. A. DYE, R. W. DOUGHERTY, C. L. COMAR, J. H. GANS; Associate Professors M. R. KARE, L. L. NANGERONI; Research Associate R. H. WASSERMAN; Assistants WILLIAM MEDWAY, D. N. TAPPER, H. E. BOND, A. L. ARONSON, J. M. BOWEN.

The following fields of activity are covered in the work of the department: animal physiology, human physiology, pharmacology, and radiation biology. The department is well equipped for work in these fields.

10. *ANIMAL PHYSIOLOGY*. Spring term. Credit three hours. M W F 10. Professor DOUGHERTY or Associate Professor KARE.

A course of lectures and demonstrations arranged especially for students of agriculture but open to others. Students taking this course should be familiar with the first principles of chemistry and biology.

11. *PHYSIOLOGICAL CHEMISTRY*. First year, fall term. Credit six hours. Lectures and recitations, T 8, Th 8, F 11. Laboratory, M T Th 2-4:30. Associate Professor KARE and assistants.

Includes also the elements of biophysical chemistry. A part of the course is devoted to a study of the normal chemical constituents of the blood and urine and the quantitative determination of such as have been found most important in physiological and clinical studies.

12. *PHYSIOLOGY*. First year, spring term. Credit three hours. M W F 8. Professor DUKES.

Lectures and demonstrations on blood and lymph, circulation, respiration, digestion, and absorption.

13. *PHYSIOLOGY*. Second year, fall term. Credit three hours. M T W 9. Professors DUKES, DYE, and DOUGHERTY.

Lectures and demonstrations on the muscular and nervous systems, senses, excretion, metabolism, temperature regulation, endocrine organs, and reproduction.

14. *EXPERIMENTAL PHYSIOLOGY*. Second year, fall term. Credit three hours. Laboratory, Th 8:30-11, F 8-1; or W 10-12:30, S 8-1. Associate Professor NANGERONI and assistants. For nonveterinary students registration is by permission.

15. *PHARMACOLOGY*. Second year, spring term. Credit four hours. Lectures, T Th 11; laboratory, M F 10-12:30 or W S 10-12:30. Professor GANS.

16. *ADVANCED EXPERIMENTAL PHYSIOLOGY*. Spring term. Credit two hours. Laboratory, F 9-1. Associate Professor NANGERONI and collaborators. Prerequisites, Physiology 12 or 13, or its equivalent, and Physiology 14, or its equivalent. Registration by permission.

17. *SPECIAL PROBLEMS IN CHEMICAL PHYSIOLOGY*. Both terms. Hours and credit to be arranged. Registration by permission.

This course, adapted to the needs of students, will consist of laboratory work, conferences, collateral readings, and reports.

18. *RADIOISOTOPES IN BIOLOGICAL RESEARCH—PRINCIPLES AND PRACTICE*. Spring term. Credit three hours. Open to graduate students and upperclassmen. Prerequisite, a course in quantitative chemistry and permission of instructor. Professor COMAR.

Lectures, demonstrations, and laboratory on the fundamentals of atomic energy procedures and applications to biological research. Hours to be arranged.

19. *RESEARCH*. Both terms. Hours to be arranged. For graduates only.

303. *HUMAN PHYSIOLOGY*. Either term. Credit three hours. M W F 10. Professor DYE. Prerequisite, a previous course, either in high school or college, in biology and in chemistry. Open to students in the Colleges of Arts and Sciences, Home Economics, Agriculture, and others.

An introductory course designed particularly to present fundamentals and practical information concerning the physiological processes and systems of the human body. Lectures, illustrations, and demonstrations.

305. *ENDOCRINOLOGY AND METABOLISM*. Fall term. Credit three hours. M W F 8. Professor DYE. Prerequisites, six or more hours of biology and a previous or parallel course in organic chemistry. Open to upperclassmen and graduate students.

A study of intermediary metabolism, endocrinology, and reproduction. Illustrated lectures.

PATHOLOGY AND BACTERIOLOGY

Professors PETER OLAFSON, W. A. HAGAN, H. L. GILMAN, P. P. LEVINE, D. W. BAKER, J. A. BAKER, D. W. BRUNER, C. G. RICKARD, J. H. WHITLOCK, K. MCENTEE, J. H. GILLESPIE; Associate Professors J. FABRICANT, J. BENTINCK-SMITH, M. C. PECKHAM, C. I. BOYER, BEN E. SHEFFY; Assistant Professor JOHN R. E. TAYLOR; Laboratory Director T. F. BENSON; Research Associates JOAN BURGHER, V. MARSHALL; Instructor J. M. KING; Assistants L. E. CARMICHAEL, R. R. CHALQUEST.

The laboratories of the department are well equipped with modern apparatus providing opportunity for advanced work, for those students who are properly

prepared, in pathological anatomy, autopsy work, pathogenic bacteriology, immunity, virology, and parasitology. The department operates two diagnostic laboratories, one for poultry diseases and the other for general diagnostic work, to which a great deal of pathological material and many blood samples for serological testing come from all parts of the state. These laboratories furnish an abundance of fresh materials for teaching work and for research in animal diseases. The clinics and the routine autopsies also furnish material.

The following courses are required in the curriculum of the Veterinary College and are given particularly for veterinary students. When there is room for them, properly prepared students of other colleges will be admitted, but permission to register must be obtained in each case.

40. *GENERAL PATHOLOGY LECTURES*. Second year, fall term. Credit two hours. T Th 11. Professor RICKARD. Prerequisite, Zoology 305 and 306 (Histology and Embryology) or equivalent. In addition, it is desirable that the student shall have had at least one year's work in anatomy and physiology. In special cases of students who are majoring in biology and expect to take no further work in pathology, these prerequisites may be waived in part. When this is done, the course will not be accepted as a prerequisite for other courses.

40a. *GENERAL PATHOLOGY LABORATORY*. Second year, fall term. Credit two hours. Section I, W S 10-12:30. Section II, M F 10-12:30. Professor RICKARD. Course 40 must be taken simultaneously or have been completed previously.

41. *SPECIAL PATHOLOGY LECTURES*. Second year, spring term. Credit two hours. T 10, Th 10. Professor OLAFSON. Prerequisite, Course 40a.

41a. *SPECIAL PATHOLOGY LABORATORY*. Second year, spring term. Credit three hours. Section I, M 10-12:30; W F 2-4:30. Section II, T 2-4:30, W S 10-12:30. Professor RICKARD. Course 41 must be taken simultaneously or have been completed previously. Work in hematology is included.

42. *INFECTIOUS DISEASES*. Third year, fall term. Credit three hours. M W F 10. Professor HAGAN. Prerequisites, Courses 41 and 43.

43. *BACTERIOLOGY AND IMMUNOLOGY*. Second year, fall term. Credit four hours. M T W Th 1:30. Professors BRUNER and J. A. BAKER. The course includes general and pathologic bacteriology and immunology.

43a. *BACTERIOLOGY AND IMMUNOLOGY LABORATORY*. Second year, fall term. Credit five hours. M T W Th F 2:30-5. Professors BRUNER and J. A. BAKER, and assistants. Open to students who have taken or are taking Course 43 or its equivalent.

46. *DISEASES OF POULTRY*. Third year, spring term. Credit three hours. M W 10, F 2-4:30. Professors LEVINE, PECKHAM, and TAYLOR.

48. *FOOD QUALITY CONTROL*. Third year, fall term. Credit six hours. M W F 11, M W F 2-4:30. Professor OLAFSON and collaborators.

Veterinary inspection to control quality and wholesomeness of meat, meat food, dairy, fish, and poultry products and to study dairy farms and plants in which these products are produced, processed, manufactured, stored, etc. Certain parts of the course are given by members of the Departments of Poultry Husbandry, Dairy Industry, and Animal Husbandry of the College of Agriculture, and the Department of Medicine of the Veterinary College.

62. *ANIMAL PARASITOLOGY*. Second year, spring term. Credit three hours. T 8, F S 10. Professor D. W. BAKER and guest speakers. Prerequisites, Pathology 40, 40a, and Zoology or Biology.

This introductory course endeavors to provide the student with a knowledge of

fundamental facts and principles about animal parasitisms. Emphasis is given to the biological aspects of the subject, such as the interrelations of host and parasite, the life cycle of the parasite, the epidemiological factors, and underlying principles of treatment and prevention rather than to nomenclature and morphology. The general principles of treatment are thoroughly discussed. A comprehensive study of the parasitic diseases of the horse, cow, sheep, goat, pig, dog, cat, and certain wild animals of economic importance is arranged on the basis of the parasitism of the host rather than by the more conventional system of zoological affinities. The parasitisms of animals transmissible to man are discussed briefly.

62a. *PARASITOLOGY LABORATORY*. Second year, spring term. Credit one hour. Th 2-4:30. Professor WHITLOCK. Open only to veterinary students. A companion course to 62 with the same prerequisites.

A laboratory study of the helminth and arthropod parasites of domestic animals with particular emphasis on the identification and bionomics of the forms of veterinary importance.

63. *APPLIED PARASITOLOGY*. Third year, spring term. Credit one hour. F 10-12:30. Professor WHITLOCK. Open only to veterinary students. Prerequisites, Courses 62 and 62a.

An organized study of the parasitic diseases of domestic animals with particular emphasis on the features of diagnostic importance. Special attention will be given to the laboratory and post-mortem techniques that are of value in applied parasitology.

Note: The following courses are not a part of the regular veterinary curriculum. Courses 61 and 170 are given especially for students in the College of Agriculture. Course 149 is given for those students who have had no work in pathological anatomy. The others are for graduate and advanced undergraduate students. Permission to register must be obtained by all students electing these courses.

61. *HEALTH AND DISEASES OF ANIMALS*. Spring term. Credit three hours. Lectures, M W F 11. Professor GILMAN and collaborators. Not open to first-year students or to those who have had no course in animal husbandry. The causes and the nature of the common diseases of livestock are discussed. Emphasis is placed on the prevention and control of animal diseases.

64. *ADVANCED WORK IN ANIMAL PARASITOLOGY*. Fall and spring terms. Credit one to three hours, by arrangement. Professors BAKER and WHITLOCK. Prerequisites, Courses 62 and 62a. For advanced undergraduate and graduate students. Special problems concerned with the parasites of domestic animals.

149. *PATHOGENIC BACTERIOLOGY*. Spring term. Credit five hours. T Th 1-4:30 and S 10-12:30. Professor GILLESPIE.

150. *LABORATORY METHODS OF DIAGNOSIS*. Credit one to three hours. Hours by appointment. Dr. BENSON. Prerequisites, Courses 41a and 43a or 149. Instructions and practice in the application of bacteriological, pathological, and serological methods for the diagnosis of disease.

152. *ADVANCED WORK IN PATHOLOGY, BACTERIOLOGY, VIROLOGY, OR IMMUNOLOGY*. Fall and spring terms. Credit one to three hours. Hours to be arranged. Professors OLAFSON, LEVINE, J. A. BAKER, and BRUNER.

Properly prepared students may undertake special problems or receive special assignments.

153. *HEMATOLOGY*. Spring term. Credit one hour. W 10-12:30 or 2-4:30. Professor RICKARD. Morphological studies of blood, cerebrospinal fluid, transudates, exudates, and urine. Taken by veterinary students as a part of Course 41a.

154. *SEMINAR*. Fall and spring terms. No credit. Required of all graduate students. Undergraduate students are admitted.

170. *POULTRY HYGIENE AND DISEASE*. Fall term. Credit two hours. Lecture and laboratory, Th 1:40-4. Associate Professor PECKHAM. Prerequisites, Animal Physiology 10 or Human Physiology 303, and General Bacteriology 3.

THERAPEUTICS AND SMALL ANIMAL DISEASES

Professors E. P. LEONARD, R. W. KIRK; Resident Veterinarian J. R. ANNIS; Medical Internes H. F. DOERGE, D. B. DAVIS.

The instruction in this department consists of lectures, recitations, and laboratory work. In therapeutics, instruction is not limited to the application of medicine to the treatment of diseased conditions but includes their actions upon the body, including toxicology, official preparations, and prescription writing. The small animal clinic furnishes abundant material for inspection in applied therapeutics of these animals, including the surgical as well as the medical. This clinic is run as any small animal practice. The students are assigned to the cases, assist in any operations, and under close supervision have charge of the patients.

20. *THERAPEUTICS AND PHARMACY*. Second year, spring term. Credit four hours. Lectures, M T W Th 9. Professor KIRK. Prerequisites, Physiology 13 and 14.

21. *DISEASES OF SMALL ANIMALS*. Third year, fall term. Credit three hours. M W F 9. Professor KIRK. Prerequisite, Special Pathology.

22. *DISEASES OF SMALL ANIMALS*. Fourth year, fall term. Credit three hours. M W F 8. Professor LEONARD. Prerequisite, Special Pathology.

23. *SURGICAL EXERCISES*. Third year, spring term. Credit one hour. M T W or Th 2-4:30. Professor LEONARD.

24. *ADVANCED WORK*. Five or more hours a week throughout the term. Research in medicine and surgery of small animals. Professors LEONARD and KIRK.

MEDICINE AND OBSTETRICS

Professors M. G. FINCHER, J. M. MURPHY, S. J. ROBERTS, F. H. FOX; Field Veterinarians S. D. JOHNSON, G. E. MORSE, R. GUTHRIE; Medical Internes ROBERT MOORE and JOHN TASKER.

The course in veterinary medicine, principles and practice, extends over the last two years of undergraduate study, the subjects of the second year being distinct from, and complementary to, those of the first. It includes the constitutional, dietetic, and toxic affections and the noninfectious maladies of the different systems of organs—digestive, respiratory, circulatory, urinary, cutaneous, and visual—of the various genera of domestic animals. It also includes a study of the clinical phases of infectious and parasitic diseases and the disturbances of metabolism.

Our proximity to a large agricultural college and to a well-stocked farming community tends to secure a greater variety of patients than can be had in a large city remote from country flocks and herds. Students take charge of a few unusual cases in the hospital and many routine cases in the ambulatory clinic and keep a complete record of each case. The course also includes instruction in diagnosis. Through the medium of laboratory work students are expected to acquire a methodical system of examination by repeated systematic observations on both normal and diseased animals. The work involves the use of various special diagnostic methods taught in our own and other laboratories of the College, such as examination of the blood, milk, urine, and feces, the application of sero-diagnostic methods, etc.

Ambulatory Clinic

An ambulatory or out-clinic is conducted for the purpose of giving instruction to students under conditions identical with those encountered in private practice. Proper conveyances and equipment are provided, and an opportunity is afforded for observing such diseased farm and dairy animals as cannot be entered in the clinics of the College. The student thereby not only has an opportunity to see cases not readily brought to the College clinic but also assists in handling cases in the same manner and under the same environment as are required of the country practitioner. As the vicinity of Ithaca is largely devoted to dairying, valuable clinical material relating to obstetrics and the diseases of dairy cows is available and is extensively used. In addition, two field veterinarians associated with the New York State Mastitis Program are located at Ithaca, and senior students are required to accompany and assist them on many field trips dealing with all phases of bovine mastitis.

50. *DISEASES OF LARGE ANIMALS*. Third year, fall and spring terms. Credit: fall term, five hours; spring term, three hours. Lectures or recitations covering physical diagnosis, ophthalmology, and some sporadic diseases. Fall term, M T W Th F 8; spring term, T Th 8, S 9. Professor Fox.

51. *OBSTETRICS AND DISEASES OF THE GENITAL ORGANS, INCLUDING STERILITY AND ABORTION*. Third year, spring term. Credit five hours. Lectures, M W F S 8; laboratory, T or Th 2-4:30. Professors ROBERTS and FINCHER (abattoir work). A general survey of the subject of obstetrics and a thorough consideration of the diseases of the genital organs including sterility, abortion, and other subjects related to pregnancy and parturition. Obstetrical exercises, pregnancy diagnosis, artificial insemination, and other clinical phases of the course are presented during the laboratory periods. Further clinical instruction in obstetrics and sterility is given in the ambulatory clinic and at a near-by abattoir in the third and fourth years.

52. *DISEASES OF LARGE ANIMALS*. Fourth year, fall and spring terms. Credit: fall term, two hours; spring term, four hours. Fall term, T Th 8; spring term, M T W Th 8. Professor FINCHER.

SPECIAL LECTURES. During the year, lectures on special topics in medicine will be given by eminent practitioners and teachers of veterinary medicine. These will form a part of the instruction in this department.

OPPORTUNITIES FOR RESEARCH. The activities of the department, aside from the instruction work, are devoted to research in connection with diseases of cattle, including mastitis, the phenomena of sterility and abortion in animals of breeding age, and diseases of newborn calves. Opportunity is afforded for participation in the investigations by graduate students having acceptable preparation.

SURGERY

Professors A. G. DANKS, D. D. DELAHANTY; *Associate Professor* J. C. GEARY; *Resident Surgeon* J. F. KAVANAUGH; *Surgical Interne* T. N. GORMAN; *Farrier* E. W. LAYTON.

The instruction consists of classroom and laboratory work designed to afford training for practice.

Classroom Work

Course 30 in General Surgery, Course 40 in General Pathology, and Course 31 in Surgical Exercises together constitute a group designed to impart a general knowledge of the principles of surgery, surgical pathology, therapeutics, and operative technique.

Course 32, a total of seventy-five lectures and recitations, is devoted to the surgery of the various regions of the body and includes horseshoeing.

Laboratory Work

The laboratory work includes Surgical Exercises and General Surgery. In the course in Surgical Exercises the student is required to perform most of the important operations on horses and cattle. The animal is placed under general anesthesia, which is maintained until the close of the period, when the subject is destroyed. The maintenance of chloroform anesthesia for three consecutive hours gives the student valuable experience in the technique of general anesthesia, for which there is a constantly increasing demand. Emphasis is placed on asepsis and antisepsis, arrest of hemorrhage, suturing, and dressing, so that, while acquiring skill and knowledge of the appearance, resistance, and general character of living tissue, the student also forms proper habits in surgical procedure.

In General Surgery laboratory, most emphasis is placed upon the farm animals, but many basic principles may be adapted to all classes of animals. Subjects taught include restraint, various methods of administering medicines, suturing, bandaging, examination of teeth, examination of the feet, and complete examination for soundness.

Clinical Surgery of the Farm Animal

A hospital is maintained with facilities for the hospitalization of approximately 67 patients. There are two operating rooms equipped with operating tables, stocks, diagnostic X-ray equipment, and other conveniences. There is also a farriery with a farrier in attendance. Two classes of patients are admitted: special patients and clinic patients. Fourth-year students are in the clinics for the entire day, Monday through Friday, also on Saturday and Sunday morning. Special patients are examined, diagnosed, and treated by the senior staff members. The students assist and observe. Clinic patients are examined, diagnosed, and treated by the Resident and students. In the hospital, the student has an opportunity to see, examine, and treat many unusual cases that are referred to the College by practitioners. Furthermore, the student has an opportunity to study the progress of cases, which is impossible when treating patients on the farm. The cooperation between the clinical staff and the laboratories provides the student an opportunity to study the patient critically and to correlate clinical findings with both the physiological and pathological. Every possible opportunity is given to the student to participate in the examination and treatment of patients because the student will learn more from doing than from observing.

30. **GENERAL SURGERY.** Third year, first term. Credit four hours. T Th 9, S 8, Th or S 10-12:30. Professor DANKS and assistants. Prerequisites, third-year standing in the veterinary curriculum.

31. **SURGICAL EXERCISES.** Third year, fall term. Credit one hour. T or Th 2-4:30. Professor DANKS. Three hours a week of laboratory work in surgical operations upon anesthetized animals.

32. **SPECIAL SURGERY.** Third year, spring term. Credit five hours. M T W Th F 9. Professor DANKS.

33. **JURISPRUDENCE, ETHICS, AND BUSINESS METHODS.** Fourth year, spring term. Credit one hour. F 8. Professor DANKS and associates. Lectures by a lawyer on the subjects of the expert witness, jurisprudence, and civil law; lectures by one trained in business administration on the subjects of accounting, business methods, etc.; and lectures on various practical subjects such as registration, selecting a place to practice, advertising, ethics, etc.

THE CLINICAL COURSES

Professors FINCHER, OLAFSON, LEONARD, DANKS, DELAHANTY, LEVINE, ROBERTS, KIRK, RICKARD, FOX; *Associate Professors* BENTINCK-SMITH, FABRICANT, PECKHAM; *Assistant Professor* TAYLOR; *Resident Surgeon* KAVANAUGH; *Resident Veterinarian* ANNIS; *Instructor* KING; *Medical Internes* DAVIS, DOERGE, GORMAN, MOORE, TASKER.

The practical application of the student's basic knowledge of veterinary medicine to the clinical diagnosis and therapy of disease begins in the third year of his course. During that year he is required to take Clinical Orientation, which introduces him to clinical work largely as an observer. His intensive training in clinical medicine and surgery begins in his fourth year, the greater part of which is devoted to actual handling of patients under close supervision of members of the clinical staff. The clinical instruction is divided among four departments as follows:

The Ambulatory Clinic is operated by the Department of Medicine and Obstetrics.

The Consulting Clinic is operated by the Department of Surgery.

The Small Animal Clinic is operated by the Department of Therapeutics and Small Animal Diseases.

The Poultry Clinic and the work in autopsies and clinical pathology are conducted by the Department of Pathology and Bacteriology.

Information about the respective clinical divisions will be found under the course announcements of the departments concerned. Only students who have completed the first two years of the veterinary curriculum will be admitted to any one of the clinical courses.

Semester credits in clinical courses are not given, but students must complete all prescribed courses satisfactorily to be eligible for graduation.

201. CLINICAL ORIENTATION. Throughout the third year. Fall term, T 10-12; spring term, daily 11-1. Professor LEONARD in charge.

Methods of clinical examination will be demonstrated, and selected cases from all the clinics will be presented and discussed.

202. CLINICAL CONFERENCES. Throughout the fourth year. Fall and spring terms, F 12-1. Resident Surgeon KAVANAUGH in charge.

These conferences will be attended by all members of the fourth-year class and by staff members representing not only the clinical but the preclinical or basic sciences as well. Students will be required to present reports on their studies of selected cases from the clinics, and these will be criticized and discussed by the students and faculty members. In this way special knowledge and viewpoints of the anatomist, biochemist, physiologist, pathologist, bacteriologist, and parasitologist, as well as those of the clinicians, will be brought to bear on problems of diagnosis and therapy.

203. CLINICS. Throughout the fourth year. Daily, including nights and Sundays when necessary. Professor LEONARD in charge.

During his fourth and final year the veterinary student is required to spend his time, after 9 o'clock daily, studying and ministering to the ailments of patients. He is on call, night and day, during the entire year. For this reason he is not permitted to carry extra academic courses, and outside part-time employment is not accepted as a valid excuse for failure to meet his full responsibilities in these courses.

Under a plan of rotation, students are required to work in groups in several clinics so that they may acquire a varied experience. Work in one of the clinical divisions may not be substituted for that in any of the others.

Work in clinical pathology and autopsies will be supervised by the Department of Pathology and Bacteriology. Such work is not regarded as separate courses but

as fundamental parts of the clinical training. As a part of their clinical duties, students will be required to carry out, under the supervision of the clinical pathologist, such laboratory procedures as are indicated. If the patient dies, the same students who attended him during life will be required to conduct the autopsy and to make any pathological, bacteriological, or biochemical tests that are necessary to provide complete information on the nature of the disease, the reasons for failure of the therapeutic procedures used, and the cause of death.

At the end of each term, the performance of each student in all the clinical divisions will be considered by all men giving the course, in a special meeting called for this purpose. Failure to do satisfactory work in any of the divisions will mean failure in the entire course.

COURSES IN THE VETERINARY CURRICULUM GIVEN BY OTHER COLLEGES OF THE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

305-306. *ZOOLOGY*. Histology and Embryology. Required of first-year students. Fall and spring terms. Credit eight hours. Fall term: lectures, T F 12; laboratory, W F 2-4:30. Spring term: lectures, W F 9; laboratory, W F 10-1. Professors ADELMANN and WIMSATT.

The aim is to provide the student with a practical knowledge of the normal structure and development of the tissues and organs of the animal body by the direct study of them in the laboratory. From time to time the ability of the student to recognize the normal structure is tested by the identification of unlabeled preparations. The laboratory work is supplemented by recitations, reviews, and lectures covering the general aspects of the subject.

COLLEGE OF AGRICULTURE

1. *ANIMAL HUSBANDRY*. Introductory Livestock Production. First year, fall term. Credit three hours. Lectures, M W 8. Laboratory, W 11-1. Judging Pavilion. Assistant Professor POND.

A survey course that gives the student a concept of the scope of the animal industry, an insight into the opportunities it offers, and a perception of its fundamental problems. It includes the fundamentals of successful livestock production that form a foundation on which to build specialized knowledge and skill in succeeding courses. It should serve equally well for students majoring in other fields who will take but one course in animal husbandry. Animals specifically covered are beef cattle, sheep, swine, and horses. Two scheduled evening prelims are given.

3. *BOTANY*. Poisonous Plants. First year, spring term. Credit two hours. Lectures and demonstrations, S 9, Th 2-4:30. Assistant Professor KINGSBURY.

A discussion of the toxic effects of plants of the United States and Canada on domestic animals, the recognition of principal toxic species, and the treatment and control of plant poisonings.

11. *ANIMAL HUSBANDRY*. The Principles and Practice of Animal Feeding. Second year, spring term. Credit four hours. (Two hours credit given if taken after Course A.H. 10. In these instances, only the first half of A.H. 11, which deals with nutrition, need be taken. The second half of the course is devoted to applied feeding.) M W Th S 8. Professor REID.

Consideration is given to the basic principles of animal nutrition, nutritive requirements for various body functions, composition and nutritive value of feeds, and the formulation of animal rations. Special emphasis is given to nutritional problems relating to animal health.

124. *POULTRY HUSBANDRY*. Animal Genetics. First year, spring term. Lectures, T Th 9. Rice 300. Credit three hours. Professor HUTT. Problems and discussion, W 2-4:30. Rice 300.

Principles of genetics; sex determination and sex linkage; inherited characters in domestic animals, with special reference to lethal genes and genetic resistance to disease; progeny testing; inbreeding and crossbreeding.

50v. *ANIMAL HUSBANDRY*. Dairy Cattle. First year, spring term, first five weeks only. Credit one hour. Professor TURK. Lectures, T Th S 10, Wing A. Laboratory, M 2-4:20. Judging Pavilion.

Aspects of milk secretion and dairy cattle breeding, feeding, and management of concern to the veterinarian are the principal topics covered.

DEPARTMENT OF CLINICAL AND PREVENTIVE MEDICINE

27. *FUNDAMENTALS OF ROENTGENOLOGY*. Third year, spring term. Credit one hour. Th 10. Associate Professor SHOWACRE. A brief survey of X-ray physics, technique of operation of modern equipment, X-ray protection, darkroom procedure, and fundamentals of diagnosis.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

The Advanced Army ROTC Course is an elective open to those veterinary students who have credit for two years' basic Army, Navy, or Air Force ROTC, or who are veterans. The course requires attendance in three morning classes of one hour each and one afternoon for two hours each week during each semester. Upon successful completion of the course, and if recommended by the Professor of Military Science and Tactics, students will be commissioned Second Lieutenants in one of the branches of the Regular Army or United States Army Reserve. Upon being admitted to the practice of Veterinary Medicine, Reserve Officers may request transfer from their basic branch to the Veterinary Corps. Further information may be found in the *Announcement of the Independent Divisions and Departments* or may be obtained from the Military Department, 107 Barton Hall.

APPENDIX A

OPENINGS FOR VETERINARIANS IN AMERICA

THE FIELD of veterinary medicine offers excellent opportunities for those who have a liking for medicine and are interested in animals. The work often is rigorous. The compensation varies greatly. One can seldom become wealthy as a veterinarian, but intelligent and conscientious service usually is rewarded by an adequate income. Those who are genuinely interested in the work have the satisfaction of serving a useful purpose; those who are looking for great financial returns are advised to look elsewhere.

Some of the opportunities for veterinary graduates are given below:

I. PRIVATE PRACTICE

Veterinary practice is a wide field with excellent opportunities for well qualified persons. Practice may be (a) general, in which the individual offers his services in dealing with all species of animals; (b) small animals, in which only household pets are treated; or (c) special, in which only certain specific conditions are handled. About two-thirds of the graduates of veterinary colleges sooner or later become private practitioners.

II. SALARIED POSITIONS

About one-third of veterinary graduates obtain positions on a salary basis. The majority of these are with the federal, state, county, and municipal governments, the remainder with private corporations.

(a) Private Corporations:

Many veterinarians are employed by the large milk companies, by large stock farms, by serum and virus manufacturers, and by drug manufacturers.

(b) Governmental Agencies That Employ Graduate Veterinarians:

1. *Agricultural Research Service, U.S. Department of Agriculture*

This Service employs more veterinarians than any other single agency. The greatest number are engaged in meat inspection, but many act as livestock agents and inspectors, inspectors in quarantine stations, and inspectors in biologic production plants; others are engaged in research and investigation in laboratories and in the field.

2. *Veterinary Corps, U.S. Army and U.S. Air Force*

Civilian veterinarians who are males, physically qualified, and graduates of a veterinary college acceptable to the Surgeons General of the U.S. Army and U.S. Air Force and who elect to go on active duty are eligible to make application for appointment in the grades of first lieutenant to colonel inclusive, the grade being determined by the age, veterinary professional experience, and professional qualifications of the applicant.

3. *State Governments*

Every state has a state veterinarian or similar officer, usually in the department of agriculture, whose duties are to look after the health of animals by enforcing laws and regulations drawn for this purpose. In many states the state veterinarian has a corps of assistant veterinarians.

Many state health departments have one or more veterinarians on their staffs to advise on animal diseases that have significance in human health and to investigate outbreaks of such diseases.

Almost every agricultural school has a veterinary department, some of these employing five or six veterinarians as research workers and teachers. The veterinary colleges of the country have staffs of twenty or more veterinarians each. Teaching opportunities are numerous in every field of veterinary education. Young veterinarians who have been in the upper quartile of their class should consider this branch of the profession seriously.

4. *Municipal Governments*

Most cities employ graduate veterinarians on a full-time basis, and many towns and villages on a part-time basis, as members of their health departments. The duties of these men usually are connected with the sanitary control of meat and milk.

APPENDIX B

LEGAL REQUIREMENTS FOR THE PRACTICE OF VETERINARY MEDICINE IN THE UNITED STATES

BEFORE one can practice veterinary medicine in the United States he must obtain a license from the state or states in which he locates his practice. This license generally is issued by the department of education or the department of agriculture on the basis of an examination set by a veterinary licensing board. Some states issue licenses, without examination, by reciprocity when the applicant has been licensed in other states.

Information about the licensing laws of the various states can usually be obtained by directing a letter of inquiry to the department of agriculture or the state veterinarian in the state capital.

In New York the licensing agency is the State Education Department, Albany, New York. Examinations are given twice a year. Applicants are required to furnish evidence of adequate preprofessional as well as professional education, of good moral character, and of being at least 21 years of age. Application for the examination must be filed at least 30 days before the scheduled date and must be accompanied by a fee of \$40.

STUDENTS

GRADUATE STUDENTS, 1956-1957

- Adams, Eugene, D.V.M., M.S., Wichita, Kans.
 Adler, H. Jonathan, V.M.D., M.S., Ph.D., Jerusalem, Israel
 Benson, Thomas F., B.S., D.V.M., Sandy Springs, Md.
 Bond, Howard E., B.S., D.V.M., Lincoln, Calif.
 Boucher, John Holly, B.S., D.V.M., M.S., St. Joseph, Mo.
 Carmichael, Leland E., A.B., D.V.M., Arcadia, Calif.
 Costa Val, Vicente de Paulo, D.V.M., M.S., Belo Horizonte, Brazil
 de la Vega, Elmo, D.V.M., Barranco, Lima, Peru
 Dougherty, John, A.B., STB., M.S., Rochester
 Durrani, Mohammad Z., B.V.Sc., M.S., Ph.D., Quetta, Pakistan
 Gutekunst, Richard, B.S., M.S., Allentown, Pa.
 Hyde, John L., A.B., D.V.M., Ithaca
 King, John M., D.V.M., Wilmington, Del.
 McClure, Robert, C., D.V.M., Malcolm, Ia.
 Marshall, Vincent, D.V.M., Ithaca
 Medway, William, B.S., D.V.M., Elie, Manitoba, Canada
 Price, Jessie I., B.S., Ithaca
 Sarkar, Siddhartha, B.Sc., G.V.Sc., M.S., Belur, West Bengal, India
 Tapper, Daniel N., B.S., V.M.D., Camden, N.J.

FOURTH YEAR, CLASS OF 1958

- Altman, Robert B., Brooklyn
 Apostolides, Efstratios, East Rockaway
 Archer, Eric G., Long Island
 Bond, Harold H., Jr., Lebanon, N.H.
 Bowers, Louis V., Somerville, N.J.
 Brayton, James B., Poultney, Vt.
 Briggs, Berkeley D., Deposit
 Buchanan, Ronald La Vere, Venice, Utah
 Burgess, Robert L., Dover Plains
 Burgher, Clarence M., Whitney Point
 Cook, Miller A., Nicholville
 Cotter, Raymond W., Gettysburg
 Crawford, Alan E., Garden City
 Crissey, Richard, Ithaca
 deLahunta, Alexander, Concord, N.H.
 English, Beatrice S., New York City
 Eno, Donald Q., Honesdale, Pa.
 Ferrell, John F., Newark
 Frink, Elverd J., Norwich
 Geronimus, Mark J., Brooklyn
 Gorelick, Jack A., Jamaica
 Greenwood, Clinton M., New York
 Hagar, Benjamin S., Jr., Plattsburgh
 Hjerpe, Charles A., New Britain, Conn.
 Hoch, Theodore N., New York City 67
 Hoffer, Richard E., Valley Stream
 Holmes, Dorothy Nielsen, Dryden
 Holmes, Wallace, Dryden
 Hutchins, Samuel III, Bellows Falls, Vt.
 Jackson, John, Morrisville
 Jordan, George, St. James
 Koeth, Waltraut Marie, Elmhurst
 Kravis, Eugene M., New York City 10
 Lavignette, Andre, Plattsburgh
 Mielke, Donald E., Sanborn
 Moore, William E., Nichols
 Morris, Mark L., Jr., Topeka, Kans.
 Noonan, James T., Akron, Ohio
 Nytych, Thomas F., Binghamton
 Oehme, Frederick W., Ozone Park 20
 Pearson, Erwin G., Carlton, Ore.
 Peterson, Earle N., Sidney Center
 Post, John E., Sussex, N.J.
 Rague, Edwin L., Staten Island 10
 Rasey, Robert G., Randolph
 Remson, Arnold, Buffalo 16
 Russell, Harry S., Caledonia
 Schultz, Myron G., Belle Harbor, L.I.
 Wirth, Donald O., Richmond Hill
 Wood, Leonard, New York City 56

THIRD YEAR, CLASS OF 1959

- Ayanian, Ara Aris, Syracuse
 Baer, George Martin, New Rochelle
 Barkan, Alfred Lee, Bronx 63
 Beck, Albert Martin, Ithaca
 Burns, John Cornelius, Little Falls
 Cameron, Harlow Jarvis, Hempstead
 Comans, Edmond, Brooklyn 20
 Davidsen, Donald Richard, Greenwich
 Duberman, Stanley Peter, Brooklyn
 Ebertz, Peter Edward, Auburn
 Fineman, J. Robert, North Branch, N.J.
 Gould, Charles Norman, East Hampton
 Holmes, Richard Theodore, Crestwood
 Kennedy, Wilbur Duane, Mars, Pa.
 Knerr, William Dale, Cleveland, Ohio
 Kronfeld, Arthur Isiah, Forest Hills
 Kyper, John Sidney, Huntingdon, Pa.
 Latimer, William Richard, Bronx
 Latschar, Albert William, Milltown, N.J.
 Laundy, Roger Alan, Snyder 21
 Layer, Paul Christian, Akron
 Lindenmaier, Paul R., Chester
 Long, John Raymond, Troupsburg
 Lowe, John Edward, Morristown, N.J.
 McCarthy, Richard Edward, Glens Falls
 Mancuso, James George, Brooklyn 29
 Marston, Alan Irving, North Hampton, N.H.
 Mendel, Eric Werner, Windsor
 Merz, Rodney Frederick, Bayside
 Meyer, John Charles, Cambria Heights
 Murphy, Frederick A., Cambria Heights
 Nelson, Albert Wendell, Reading, Mass.
 Nelson, Carl Daniel, Jamestown
 Orts, Keith Henry, Dunkirk
 Palmer, Kenneth M., Brookfield
 Peterson, Paul Andrew, Alfred Station
 Quartey, Sydney B. K., Ghana, West Africa
 Rapp, John Paul, Northport
 Schatzle, George Nicholas, Cleveland
 Schuster, Rudolph, Nineveh
 Shaff, Steven Irwin, New Rochelle
 Shope, Richard E., Jr., New York City
 Shurtleff, George Clarence, Jamesville
 Van Order, Mary Elizabeth, Ithaca
 Weber, Philip August, Newport, N.H.
 Williamson, Andrew Jay, Whitehouse Station, N.J.
 Wooding, Albert Gene, Clay
 Zitek, William Emil, Plattsburgh

SECOND YEAR, CLASS OF 1960

- Allison, William Bramlett, Jr., Pulaski, Va.
 Barrett, George Harvey, Mahopac
 Beyeler, Fred R., Ithaca
 Bishop, Sanford Parsons, Springfield, Vt.
 Black, John Norman, Fredonia
 Bloch, Jack, Oxford
 Caciagli, Anthony D., Syracuse
 Campbell, Blair Hendron, Nyack
 Chamberlain, Allan Charles, Ellisburg
 Clark, H. Fred, Buffalo
 Cohen, Boris Philip, Mineola
 Crandall, William Warren, New York
 Davies, Richard O., New York
 Dey, Stephen Perrine, Allentown, N.J.
 DuBiel, William Wright, Rochester
 Foster, Carolyn, Randolph
 Goddard, Susan Adele, Larchmont
 Hudson, James Topping, Freeport, Me.
 Ingram, Walter James, Bronxville
 Jogodnik, Richard B., Laurelton 13
 Johnson, Merrill K., Hudson
 Jungreis, Tobias, Brooklyn 19
 Keefe, Thomas James, W. Hartford, Conn.
 Kenneson, Gardner William, Penacook, N.H.
 Knochenhauer, Arthur William, Bayside 64
 Levenson, Robert Howard, New York
 Lindey, Myron Henry, Utica
 Lochtie, Robert Moreland, Waldron, England
 Loveless, Merle Carleton, Wolcott
 Marshall, John Leahy, Scotia
 Michael, Amnon, Haifa, Israel
 Miller, Lee Edward, Frankfort, Ind.
 Morrison, Adrian Russell, Jr., Waterville, Me.
 Morrow, David Austin, Tyrone, Pa.
 Myer, Eric Julius, Greenvale
 Olson, Roger Edwin, Racine, Wis.
 Phemister, Robert David, Webster Groves, Mo.

Pritchard, Donald Keren, Holcomb
 Salm, Herbert Marx, Greene
 Sickmiller, Daniel Frederick,
 Jeffersonville
 Swart, Donald Arthur, Hinsdale
 Tharp, Barry Richard, Auburn
 Thomson, Patricia Louise, Scotia

VanKruiningen, Herbert J.,
 Wallington, N.J.
 Washburn, Kerry William, Batavia
 Westee, Donald Arthur, Huntington
 Wooley, Richard Earl, Buffalo
 Zehr, Abram John, Mannsville

FIRST YEAR, CLASS OF 1961

Adams, Joseph Warren, Teaneck, N.J.
 Andrews, Elmore L., Jr., Melrose, Mass.
 Belman, Stefan G., New Hyde Park
 Boese, Richard A., Monsey
 Boudinot, Frank L., Highland Park, N.J.
 Burns, James G., Durham, N.H.
 Case, Robert F., Cherry Creek
 Collins, Walter E., Unadilla
 Dedrick, Douglas G., Delevan
 Deignan, Joseph M. Jr., West Orange,
 N.J.
 DeYoung, George G., Fonthill, Ont.,
 Canada
 Farrell, Virginia F., Bayside 57
 Fell, Harold W., Jr., Snyder
 Fisher, John R.S., Baltimore, Md.
 Fleischman, Robert W., St. James
 Fletcher, Thomas F., New York
 Forrest, Richard E., Newport, Vt.
 Galatis, Marylyn, Springfield Gardens 13
 Gilbert, Donald L., Gilbertsville
 Gray, Bruce William, Ithaca
 Harling, Ronald W., Holley
 Hauge, John A., Staten Island 10
 Hitchcock, Floyd P., Jr., Akron
 Holmes, MacDonald J., Lawyersville
 Horan, Michael P., Snyder 21
 Hottendorf, Girard H., Bellerose
 Hunt, Donald C., Rochester, Vt.
 Johannes, Eugene L., Belmont
 Jones, Robert Earl, Brockport

Kehoe, John M., New Hartford
 Kenney, John S., Paris, Ky.
 Kowaleski, Paul V., Westminster, Mass.
 Lamb, Robert B., Hamilton
 Lawton, Richard R., Viola, Wis.
 Lee, Robert K., Dover Plains
 Lenhard, Aloysius A., Rochester 12
 Lynk, Robert E., Sharon Springs
 Mann, Floyd A., Great Neck
 Milts, Michael H., Laurelton 13
 Needham, Donald W., Holtville, Calif.
 Nelson, Charles P., Boxford, Mass.
 Palanker, Allen L., Kew Gardens
 Pray, Raymond S., Waterville
 Renaldo, Joseph P., No. Collins
 Roemer, Leroy S., Verona, N.J.
 Rofo, Calvin E., Preble
 Salzmann, George B., Bay Shore
 Sherwood, Donald K., Massena
 Smith, Richard S., Latham
 Stock, Neale D., Forest Hills 75
 Strauss, Julian M., Amenia
 Taylor, David H., Lawtons
 Trumbauer, Walter K., Lansdale, Pa.
 Van Deusen, Fred K., Jr., Schuylerville
 Walker, David U., Morrisville, Vt.
 Weber, Wilfried T., Corfu
 Wickesser, Beverly C., Westbury
 Wilkes, Bruce E., Cato
 Wooding, Merritt B., Columbus, N.J.
 Zamelis, Ansis, New York 32